

Abstract

The invention relates to a data transmission system for the frame-oriented digital data transmission of a plurality of useful signals embedded in a carrier signal, using time-division multiplex operation, rate matching being undertaken between the useful signals and the carrier signal by means of stuff locations. The data to be stuffed, and the management information for the reassignment are embedded in previously unused 8 bytes in the path layer overhead of the carrier signal superframe, and protected by an HC(6,3,3) code. Clear channel signals can advantageously be transmitted using the system, and the transmission is time-transparent and data-transparent.

09805065-052404

Key to figures

Figure 1:

Rahmen = Frame

Frame #1	Frame #2	Frame #3	Frame #4
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Überrahmen #1 =	Superframe #1
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16 Zeilen = 16 rows

Figure 2:

OCh superframe #

MFI

Useful signal #

Useful signal #

Useful signal #

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
------	-------

2,5G	2.5 G
2,5G	2.5 G
2,5G	2.5 G
2,5G	2.5 G
2,5G	2.5 G
2,5G	2.5 G

090505 052401

Figure 3:

OCh column/row	OH	SPE	Useful signal #
	OCh-POH bytes with regular meaning		Useful signal #1
			Useful signal #2
			Useful signal #3
			Useful signal #4
			Useful signal #1
			Useful signal #2
			Useful signal #3
			Useful signal #4
	Stuff control management information		Useful signal #1
	Useful signal #i		Useful signal #2
	($i \in [1, \dots, 4]$) as a function of the MFI		Useful signal #3
	<u>104</u>		Useful signal #4
	Negative stuff locations (-)		Useful signal #1
	(4 bytes)		Useful signal #2
	Useful signal #i		Useful signal #3
	($i \in [1, \dots, 4]$) as a function of the MFI		

Useful signal #4

Right-hand line: 16 parallel rows

098305.052401
07250.5905250

Figure 4:

OCh column/row	OH	SPE	Useful signal #
	OCh-POH bytes with regular meaning		Useful signal #1
			Useful signal #2
			Useful signal #3
			Useful signal #4
			Useful signal #5
			Useful signal #6
			Useful signal #7
			Useful signal #8
	Stuff control management information		Useful signal #9
	Useful signal #i		Useful signal #10
	($i \in [1, \dots, 16]$) as a function of the MFI		Useful signal #11
	<u>104</u>		Useful signal #12
	Negative stuff locations (-)		Useful signal #13
	(4 bytes)		Useful signal #14
	Useful signal #i		

($i \in [1, \dots, 16]$) as a
function of the MFI

105

Useful signal #15

Useful signal #16

Right-hand line: 16 parallel rows

0906065 06404
"04250" 0906065

Figure 5:

OCh column/row	OH	SPE
		Useful signal #
	OCh-POH bytes with regular meaning	Useful signal #1
		Useful signal #2
		Useful signal #3
		Useful signal #4
		Useful signal #5
		Useful signal #2
		Useful signal #7
		Useful signal #8
	Stuff control management information	Useful signal #9
	Useful signal #i (i ∈ [1,...,16]) as a function of the MFI	Useful signal #2
	<u>104</u>	Useful signal #11
		Useful signal #12
	Negative stuff locations (-)	Useful signal #13
	(4 bytes)	Useful signal #2
	Useful signal #i (i ∈ [1,...,16]) as a function of the MFI	Useful signal #15

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105

Useful signal #16

Right-hand line:

16 parallel rows

0906506 052404

Figure7:

Position			
Meaning	MFI	CRA	Protective information bits
HC			

Figure 8:

Position			
Meaning	MFI	CRA	Protective information bits
HC			

Figure 9:

Bit #		
Meaning	Parity	Rate matching extension RAE

09865065 052491